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Capt MacLean
AN

A MEMOIR

OF

JOHN MACLEAN, M.D.,

THE FIRST PROFESSOR OF CHEMISTRY IN THE
COLLEGE OF NEW JERSEY,

BY HIS SON,

JOHN MACLEAN,

THE TENTH PRESIDENT OF THE COLLEGE.

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TO

GEORGE MACINTOSH MACLEAN, M.D., PH.D.,

AND

ARCHIBALD MACLEAN, ESQ.,

THE OTHER SURVIVING MEMBERS OF HIS

FATHER'S FAMILY,

THIS MEMOIR IS INSCRIBED

BY THE WRITER,

IN TOKEN OF HIS LOVE AND RESPECT

FOR THEM.

PREFACE.

In preparing a history of the College of New Jersey, the writer was of necessity led to speak of his own father, who for seventeen years was a Professor in the College; and for a considerable portion of this time the only one, with the exception of President S. S. Smith, who was Professor of Divinity and Moral Philosophy as well as President.

While engaged on this work, the thought occurred to him, that he ought to write a fuller account of his father than would be suitable for the proposed history of the College; and that was the origin of this memoir.

The things mentioned in this narrative are in some instances given rather with respect to their connection with each other than to the order of their occurrence.

MEMOIR.

Dr. Maclean was born in the city of Glasgow, Scotland, on the first day of March, 1771. His father, after whom he was named, was by profession a surgeon, both in civil and military service. His grandfather, the Rev. Archibald Maclean, was minister of the Parish of Kilfinichen, which included the well known Island of Iona. Upon retiring from the army, his father practised surgery in the city of Glasgow, and resided there until his death. He was pesent at the capture of Quebec from the French, and he was the third man who succeeded in scaling the famous heights of Abraham, then regarded as a formidable and natural defence of that city. A short time before going with the British army to Canada, he married Miss Agnes Lang, of Glasgow, and their youngest child is the subject of this memoir.

In a Historical and Genealogical account of the clan Maclean, published in London, in 1838, page 282, mention is made of Dr. Maclean's going to America, and of his marriage here. His mother's name is inaccurately given as Anne

Long, instead of Agnes Lang. This genealogical account of the clan furnishes the data by which Dr. Maclean's lineage can be traced back to Gillean, the founder of the clan in the thirteenth century.

In early life he had the misfortune to lose both his parents, but had the happiness to have for his guardian George Macintosh, Esq., a gentleman of rare worth, who took great interest in his welfare, and made excellent provision for his instruction, by sending him to the Glasgow Grammar School, where he made rapid and real advancement, and then to the University, which his intelligence and proficiency enabled him to enter, while he was yet a lad between twelve and thirteen; no inquiry having been made in regard to his age.

For his good scholarship, and upon a public examination, he obtained at the Grammar School several premiums, and one or more after his admission to the University. The prizes at the Grammar School were awarded on the calends of October, in successive years, and each one consisted of a Latin classic suited to the proficiency of the pupil. The premiums assigned to the subject of this memoir were the "Excellentium Imperatorum Vitæ" of Cornelius Nepos; the Commentaries of Julius Cæsar; the works of Virgil and of Horace, and Lucan's Pharsalia. This last was given by the University, and with the following certificate signed by the *Humanity* Professor:

JOAN: M'LEAN,
Universitatis Glasguensis Alumnus
Elegantioris ingenii dotes
Diligenter graviter excolens,

Hoc Praemium Academicum,
Empt: pecuniis in hunc usum,
A Fratibus
Georgii Muirhead, quondam, L. H. P.
In hac Universitate, legatis,
Publice tulit,
Kal: Ipsis Maii, 1785,
Guli: Richardson, L. H. P.

Both in the Grammar School and in the University of Glasgow, the course of instruction in the Greek language was much more limited than the Latin curriculum. To this cause are we to ascribe the fact that Dr. M. was not the proficient in Greek that he was in Latin. Yet he never underrated the great importance of a thorough knowledge of the Greek to a liberally educated man, and especially to a minister of the Gospel. He died before his eldest son, the writer of this sketch, had fully attained the age of fourteen years; but having a hope that his son would, if spared to manhood, enter the ministry, he urged him to devote himself earnestly to the study of the Greek language. In a letter to him of the date of the 7th of November, 1812, he thus writes: "When you write to me again, which let it be soon, tell me what you are studying. In the meantime, be sure to attend particularly to your Greek; yet upon no account neglect your Latin. Be assured, that notwithstanding what ignorant or lazy people may say, it is a matter of great consequence for every gentleman, or professional man, to be a good classical scholar; but, besides, I have a particular end in view in making you one. See to it then, and be careful that you are well acquainted with Prosody. I have known several good scholars, who, from inattention to Prosody, have made themselves laughing stocks to mere drivellers in classical literature."

While a member of the University, his attention must have been given to the careful study of Mathematics and Natural Philosophy, and especially to the subject of Chemistry, for which he seems to have had a special fondness, and to which, upon leaving the University, he continued to devote throughout life much time and close attention. At the University he was, while yet a lad, a member of the Chemical Society, a club which appears to have met at the University, with the permission of the College authorities, if not under the oversight of the Professors. The members submitted, for the consideration of the Society, papers and essays upon various matters connected with the object of their association, and some of these papers seem to have foreshadowed the eminence which the authors of them attained in after life, as proficients in the art of Chemistry. The names of several of the members of this Society are given in a note on page 6 of a "Memoir of Charles Macintosh, Esq., F. R. S.," by his son, George Macintosh. They were as follows: Wm. Couper, Esq., Charles Macintosh, Esq., Mr. Candlish (father of the Rev. Dr. Candlish, of the Free Church of Scotland), Dr. Tilloch, editor of the Philosophical Magazine, London, Dr. Crawford, Mr. John Wilson, of Hurlet, near Glasgow, Major Finlay, Royal Engineers, and Dr. John Maclean, Professor of Chemistry in the College of New Jersey. The last named was probably the youngest of them, not being sixteen years of age, at the time here referred to. There were other members besides those here named, and among them were Mr. Cruikshank, Mr. Archer and Mr. Monroe, of whom mention is made in one of Dr. Maclean's papers read before the Society.

Mr. Charles Macintosh was four years older than his friend Dr. Maclean. Some extracts from the essays read by Mr.

Macintosh before this Society are given in his son's memoir of him. Seven papers, if not more, written by Dr. Maclean, were also read before it. One of these was on *respiration*, another on *fermentation*, and another on *alkalies*. The subjects of the others are unknown to the writer of this memoir. Dr. Maclean's papers on *fermentation* and *alkalies* are now in the possession of his son, Dr. George Macintosh Maclean. Some suggestions, in advance of the science of that day, are made in these two papers, e. g.

1. That *pure air* (oxygen) is the efficient cause of all fermentation, and this in opposition to the opinion, first broached by Mr. Henry, of Manchester, England, that fermentation is due to the presence of *fixed air* (carbonic dioxide).

Dr. Maclean further held, that water is the medium through which *pure air* acts on the fermentable matter, and that if the quantity of moisture is small, the septic power of the air will be more or less impeded; and, of course, the fermenting mass will be detained longer, in the different stages of fermentation, than it would otherwise be.

This paper on fermentation, No. 5, has, in the handwriting of the author, the date of the 29th of March, but the year is not given. A reference in the paper to Dr. Wm. Irvine, of Glasgow, who died in the summer of 1787, shows that it could *not* have been written *later* than March of that year, at which time Dr. M. was sixteen years of age. Most probably it was written in March, 1786, when he was but fifteen. No allusion is made to Dr. Irvine's decease, but certain remarks made by him, a year previous to the writing of the article in question, are given by Dr. Maclean.

2. In his paper on *alkalies*, No. 7, he objected to the then prevalent division of *salts* into simple and compound; the *simple* including *alkalies* and *acids*, and he inclined to the belief that *all* alkalies were compounds. Shortly before this Berthollet had shown that *ammonia*, a volatile alkali, contained nitrogen and hydrogen.

3. The paper on *respiration*, with some notes by Dr. George M. Maclean, was misplaced or lost by the writer of this memoir about thirty years ago. The design of the notes was to point out the agreement of the views advanced in the paper itself with those entertained by chemists and physicians, at the time the notes were written, viz: in 1834–5.

After stating his objections to the various theories advanced on this subject, Dr. Maclean gave it as his own opinion, that oxygen being absorbed by *the blood in the lungs*, is conveyed by the blood through the body, and that in the course of the general circulation it unites with carbon, forming carbonic acid, which is given off principally at the lungs, but in part at the skin. Thus he accounted for the general distribution of animal heat through the body. The increase of heat in local inflammations, he supposed to be due to the enlargement of the blood vessels in the parts affected, more blood than usual thereby flowing through them and giving a greater degree of heat.

The Lecturer on Chemistry, in the University of Glasgow, at this time, was the above named Dr. William Irvine, a lecturer and teacher of much note. He was Dr. Maclean's first instructer in Chemistry, and he is spoken of in respectful terms in one of Dr. M.'s papers read before the Chemical Society of that institution. Although Chemistry was not

included in the curriculum of studies assigned to the Arts, yet there can be no doubt that Dr. Maclean attended the lectures of Dr. Irvine, while yet a student in the department of the Arts. In years 1786 and '87 he attended the lectures on the Theory and Practice of Physics, and also on Anatomy, Midwifery, and Botany, as appears from the following certificates given him by Dr. Alexander Stevenson:

"That Mr. John Maclean attended my lectures on the Theory and Practice of Physic is certified by

ALEX. STEVENSON, M. D."

Also,

"That he attended *three* courses of Anatomy under my late colleague Mr. W. Hamilton; besides, a course of Botany and one of Midwifery. ALEX. STEVENSON.

Glasgow College, Sept. 20, 1790."

As it was his purpose to become a Surgeon rather than a practitioner of Physic, it is highly probable that during the years 1786 and '87 he also attended the lectures on surgery, which, however, may have been given, and probably were, in connection with those on Anatomy.

Leaving Glasgow, he repaired to Edinburgh, chiefly, it is presumed, that he might have the privilege of attending Dr. Black's course of lectures and experiments, which had secured for him a very high reputation as a chemist and a teacher, especially in Great Britain and Ireland. Dr. Black was a pupil of the celebrated Dr. Wm. Cullen, when Dr. C. was the Lecturer on Chemistry in the University of Glasgow, and the successor of Dr. Cullen in the University of Edinburgh. How long Dr. M. remained at Edinburgh is not known. The statement that he did pursue his studies at this city, for a lon-

ger or shorter time, if the writer's memory does not fail him, is made on the authority of a letter brought by Dr. Maclean to America, but now lost. This letter was in the hands of the late Rev. Dr. Samuel Miller, of Princeton, at the time he wrote a brief notice of Dr. Maclean for the edition of Lempriere's Universal Biographical Dictionary, edited by Eleazar Lord, Esq., and published in New York in 1825. The fact of his studying at Edinburgh is mentioned in Dr. Miller's article. The writer of this letter was Dr. Millar, of Glasgow, and the writer of this memoir inclines to the opinion that the gentleman here named was Richard Millar, M.D., Lecturer on Materia Medica, and afterwards Professor of the same in the University of Glasgow, from 1791 to 1834. Dr. Millar's commendation of Dr. Maclean was in very strong terms. It may, however, have been John Millar, Esq., Advocate and Professor of Law in the University. This gentleman was on terms of intimacy with Mr. George Macintosh and family.

Dr. Maclean went also to London and Paris, in which cities he had the best facilities for the prosecution of his studies in chemistry and surgery. Returning to his native city, after an absence, it is believed, of two or three years, from 1787 to 1790, he resumed here his studies for about a year, and then engaged with much success in the practice of his chosen profession, while at the same time he continued his researches in the department of Chemistry, and he was regarded by some of his learned friends, scientists of that day, as having in Scotland no superior and scarcely an equal in the New or French Chemistry.

At the time of his becoming a member of the Faculty of Physicians and Surgeons he was in the twenty-first year of his age.

From the date, Sept. 20, 1790, of Dr. Stevenson's certificate, it is evident that it must have been given after Dr. Maclean's return from Paris, and with a view to his engaging in the practice of surgery at Glasgow; and that his sojourn in London and Paris must have occurred at the time suggested above, viz: between 1787 and 1790. In one of his lectures to his classes in the College here, he makes mention of meeting Dr. Crawford in London in 1790. This must have occurred on his way from Paris to Glasgow. Dr. Crawford was a member of the Chemical Society of Glasgow.

Dr. Maclean's diploma, authorizing him to practice surgery and pharmacy, is of the date of August, 1st, 1791. It is signed by Dr. Robert Cleghorn, the President of the Faculty of Physicians and Surgeons of the City of Glasgow, and by the other officers. On the same day he was admitted a member of the Faculty, and continued to be a member of it until his death.

It was his happiness to have been a student in Paris at the time Lavoisier, Berthollet, Fourcroy, and other eminent cultivators of chemical science were yet living and at the height of their reputation; and, no doubt, their teachings exerted a powerful influence upon the scientific views and pursuits of Dr. M. During his residence at Paris, Dr. Maclean became such a proficient in the French language that he could read and speak it with as much facility as he did the English. Not only did Dr. Maclean embrace the new system of Chemistry, as developed and taught by the French Savans of this period, but he appears also to have entertained views on the comparative merits of the monarchical and republican forms of government, which eventually led him to emigrate to the United States.

In the party strifes of his adopted country, he took but little interest, yet he was devoted to her welfare, and earnestly desired her success in the war of 1812–14, before the close of which he ended his earthly career. The writer, then a lad of twelve, was quite an ardent Federalist; and, offended at hearing his father spoken of as a Democrat, he mentioned the circumstance to him, who blandly remarked that he was a British but not an American Democrat, and added, that being by birth a foreigner, he deemed it his duty not to take an active part in any merely political contests.

His coming to America was not the result of a sudden impulse, but of a deliberate conviction that he ought to come. This is evident from a letter, of the date of Sept. 21, 1794, to Mrs. George Macintosh, of Dunchattan, Glasgow, in a collection of letters written by the well known Mrs. Grant, of Laggan, and published under the title of "Letters from the Mountains." London, 1807. Of these letters, 135 in all, five and twenty were addressed to Mrs. Macintosh, an admirable lady, and one whose mind, to use an expression of Mrs. Grant's respecting her, was "so strong, and yet so tender." Mrs. Macintosh was the daughter of the Rev. Charles Moore, of Stirling, Scotland, and an aunt of General Sir John Moore. The following is an extract from the above mentioned letter of Mrs. Grant's:

"Did I tell you what pleasure it gives me to find that your friend and favorite Dr. Maclean had given up that wild scheme of going to America? I was fond of that country to enthusiasm, and spent the most delightful and fanciful period of my life in it, for mine was a premature childhood. The place where I resided was the most desirable in the whole continent, there my first perceptions of pleasure, and there my earliest habits of thinking were formed; and from thence I drew that high relish for the sublime simplicity of nature which has ever accompanied me. This has been the means of preserving a certain humble dignity in all the difficulties I had had to struggle through. Yet, from what I know of the

alterations which the last twenty years have brought about in that country, and the still greater difference which other views and associations have made on myself, though I had it now in my power to return, my judgment would check my inclination."

Although he did for a time yield to the wishes of his greatly esteemed friends, and decided to remain in the land of his birth, yet his final decision was, that it would be better for him to settle in this country, the political sentiments of which were fully in accord with his own: and in which he would have as wide a field for scientific research and usefulness, as he could possibly have anywhere else.

Before leaving Scotland for America, he had adopted, and had had engraved upon his watch seal, a simple Scotch pebble, the well known motto of "Ubi libertas, ibi patria,"—and believing that his idea of true liberty could be realized most readily and happily under our Republican form of government he determined to become an American citizen. Accordingly, he left Scotland in April 1795, and arrived at New York, the same or the following month.

Dr. Maclean's guardian, Mr. Macintosh, was a staunch loyalist, and an ardent supporter of the crown and throne; yet their different political creeds never interfered in the least with the kind feelings and affectionate regards which they entertained for each other:—the relations between them being like that of father and son. They continued to correspond as long as they lived; and the writer of this memoir, though quite a child at the time, distinctly recollects the deep sorrow manifested by his father, upon receiving the intelligence of Mr. Macintosh's decease. As an expression of his love and respect for his guardian Dr. Maclean named his third son George Macintosh.

In a letter to her friend Miss Ourry, Mrs. Grant thus speaks of this gentleman: "I should not conclude without telling you, that Mr. Macintosh is a man worth taking a journey to see, not of active benevolence only, but of restless, impetuous benevolence. I will teach you to admire him at more leisure, having no time now to do him justice."

At the funeral of Mr. Macintosh, and as expressive of Mr. Macintosh's character, the Rev. Dr. Ritchie of Glasgow preached a sermon from the words "He hath dispersed, he hath given to the poor, his righteousness endureth for ever, his horn shall be exalted with honor," and in the course of his sermon he quoted as applicable to him the words "When the ear heard him, then it blessed him, because he delivered the poor that cried and the fatherless, and him that had none to help him. The blessing of him that was ready to perish came upon him, and he caused the widow's heart to sing for joy." Dr. R. had previously said, "He was not ashamed of the gospel of Christ, he believed its doctrines, he acted upon its laws."

Until Dr. Maclean's own decease, which occurred in February 1814, there was also an intimate friendship between him and Charles Macintosh, Esq., the eldest son of his guardian, who never forgot the family of his companion and friend; but on various occasions rendered them important services, in attending to matters of business for their sakes.

Mr. Charles Macintosh while yet a youth was much devoted to the study of Chemistry, in which he became a proficient, and made several valuable discoveries in this Art, which he turned to good account in the prosecution of his profession as a manufacturer, on a large scale, of several valuable articles of commerce. His knowledge, skill and success gave him both

reputation and large wealth. He was made a Fellow of the Royal Society, and took an active part in the proceedings of the British Association for the advancement of science. In the memoir of his life, by his son George Macintosh, not less than twelve different inventions of his are mentioned: and some matters, in which he anticipated the discoveries of home and foreign chemists by several years, are also enumerated. The well known Macintosh water-proof cloth was this gentleman's invention.

With Dr. Maclean, or about the same time, there came to this country his friend Dr. and Mrs. John C. Millar, and among a very few memoranda, left in a note book by Dr. Maclean, there is the following entry respecting a seal of Dr. Millar's given to him by Mrs. Millar.

"Algernon Sidney wrote in the album of the University of Copenhagen, and signed these lines, which may be considered as a summary of his principles:

"Manus haec, inimica tyrannis,
Ense petit placidam sub libertate quietem."

N. B. Sub libertate quietem is the motto on the seal given me by my esteemed friend Mrs. Millar, the daughter of Dr. Cullen. It belonged to her husband Dr. John C. Millar, who, like myself, was an exile." This last remark confirms the opinion expressed above, that Dr. Maclean's political principles had much to do in bringing him to America. His friend, Dr. Millar, went to the then Western States, with the expectation of settling in some one of them, if he should find a suitable opening; but having been seized with a fever he was cut off shortly after his arrival in this country. His widow, Mrs. Millar, it is the impression of the writer, returned to

Scotland. Her father, the eminent Dr. Wm. Cullen, of Edinburgh, died four or five years before Mrs. Millar came with her husband to the United States.

Soon after his arrival in New York, in the spring of 1795, Dr. Maclean went to Philadelphia, and having letters to some of the most eminent physicians there, he called upon them, presented his letters and was most kindly received. Learning from these letters and from personal interviews with him, his great predilection for the subject of Chemistry, and his superior attainments in this science, Dr. Benjamin Rush, at that time at the head of the medical faculty of Philadelphia, advised his settling at Princeton, which seemed to afford the most favorable opportunity for turning to account his knowledge of Chemistry, and also for his engaging in the practice of his profession as a surgeon and physician.

Satisfied that the course indicated by his Philadelphia friends was a wise one, he came to Princeton; and, shortly after, entered with much success on the practice of physic and surgery, in connection with the leading physician of the place, Dr. Ebenezer Stockton, who proved himself to be a most true and valuable friend to Dr. M., and also to his family, both before and after Dr. Maclean's decease, for more than forty years. The business partnership between them continued for only two years, it having been brought to a close by the appointment of Dr. Maclean, in 1797, to the Professorship of Mathematics and Natural Philosophy in the College, which made it necessary for him to give up the practice of his profession as a physician and surgeon. While so employed he performed two or three surgical operations not usual in a country practice, and which, in one of our large cities, would

have secured for him an opening to both reputation and wealth. An English gentleman, by the name of Palmer, with whom he was on terms of great intimacy, often urged his removal to Philadelphia, where instead of making a bare support for himself and family, he might be sure of obtaining an ample return for the services he rendered. But his preference for the quiet and regularity of an academic life induced him to remain at Princeton, until the summer of 1812, when in consequence of certain contemplated changes in the College Faculty, he tendered his resignation, and shortly after accepted an invitation to the chair of Natural Philosophy and Chemistry, in the College of William and Mary, Williamsburg, Virginia.

Upon his coming to Princeton, in the early summer of 1795, he delivered in the College, at the request of the President, Rev. Dr. Samuel Stanhope Smith, a short course of lectures on Chemistry, which produced so favorable an impression in regard to his ability as a lecturer, that at the next meeting of the Trustees he was chosen Professor of Chemistry and Natural History, with the understanding that he was at liberty to continue his profession as a physician. The Commencement this year occurred on the 30th of September, and his election on the day following, *viz.*, the 1st of October, 1795.

Upon the decease of Dr. Walter Minto, the Professor of Mathematics and Natural Philosphy, who died October, 1796, Dr. Maclean, at the request of the Trustees, assumed, for the next College term, the duties of his late colleague, so far as the instruction in Natural Philosophy was concerned—President Smith at the same time taking charge of the mathematical department. This arrangement was made at a special

meeting of the Board, held in November of the same year, 1796. At the next *stated* meeting, Tuesday, the 11th of April, 1797, Dr. Maclean was chosen Professor of Mathematics and Natural Philosophy, and his salary was fixed at *two hundred and fifty pounds, proc.*=$666.66 a year—and it was "ordered, that Chemistry and Natural History be taught as branches of Natural Philosophy." At this time the instruction in all these branches was given only to the members of the Junior and Senior classes. The arrangement here spoken of continued until the year 1804, when, in consequence of the large increase in the number of students, the Rev. Andrew Hunter, of New Jersey, a Trustee of the College, was chosen Professor of Mathematics and Astronomy, and for four years he taught these branches. Upon the resignation of Professor Hunter, in 1808, Dr. Maclean, at the desire of the Board, again took upon himself the entire charge of the scientific department of the College, and continued in charge thereof until the date of his resignation, in September, 1812. For some years previous to his resignation, his salary was $1,250 a year, together with the use of a house on the College grounds. During a part of the time, if not for the whole of it, that he was the sole Professor of Mathematics, Natural Philosophy, Chemistry and Natural History, he was assisted in teaching the elementary parts of Mathematics by one of the College Tutors. Whatever changes were made in the College curriculum, or in the provisions for conducting it, Dr. Maclean never ceased, during his connection with the College, to be its Professor of Chemistry, and from the time of his appointment as Professor of Mathematics and Natural Philosophy he gave himself wholly to the service of the Institution,

not only in taking a large share in its teachings, but also an active part in its government, and giving his assistance whenever it was needed. Soon after his appointment as Professor of Chemistry, the following letter, written by the Rev. Dr. Smith, was given to the public in "Wood's Newark Gazette and New Jersey Advertiser," of the 11th of November, 1795:

"MR. WOODS:

Your inserting the following information in your Gazette will probably be acceptable to the students of Physic, and in general to the lovers of Natural Science throughout the State:

PRINCETON, October 26, 1795.

The Trustees of the College in this place, at their last meeting, appointed Dr. John Maclean Professor of Chemistry, in which branch of science, he will give an extensive course of lectures during the ensuing season. He will also lecture on comparative Anatomy, provided a class can be obtained that may encourage him to bestow the necessary pains. Dr. Maclean has studied Chemistry, Anatomy, Midwifery and Surgery, at Glasgow, London and Paris. He brings with him the highest recommendations from Europe, and from personal acquaintance and from attending a short course of Chemical lectures, I can assure the public that of *that* subject, and of the newest improvements that have been made in it, he is a perfect Master. He has made it an object of cultivation, not only in reference to medicine, but particularly in its application to agriculture and manufactures, so useful in every country, but especially in a new one. Other young men besides physicians, of a studious and inquisitive turn, may find great pleasure and advantage in attending these lectures; and students of medicine in the State who wish improvement in these important branches connected with their future professions, and seek it during the winter season in the neighboring cities, may be saved a considerable expense by attending at Princeton. I am well assured from the abilities of the Professor, they cannot obtain it at present with more advantage at any place in America than in the College of New Jersey.

SAMUEL S. SMITH, President of the College."

This is certainly a very high commendation of a man not yet twenty-five years of age; but it is in full accord with the statements in the numerous testimonials which he brought with him from Scotland. From these testimonials it appears

that within less than four years from the time that he was licensed to practice pharmacy, he attained a high reputation both as surgeon and a chemist. Some of the testimonials have been lost, but not a few are still in possession of the writer, which fully justify the commendations bestowed upon him by President Smith. In a letter from Dr. James Towers to Dr. Samuel L. Mitchell, of New York, Professor of Chemistry in Columbia College, the writer of the letter in speaking of Dr. Maclean uses this language :

"This will be delivered to you by Mr. Maclean, Surgeon, a particular acquaintance of mine. He was educated at the school where we became acquainted, and for some years past has practised in this City, and I am sorry at his departure, as it deprives us of one of our best informed members."

"You will find him in every respect the scholar and the gentleman : and *as a Chemist he has not left his equal* in this place." (Glasgow).

Dr. James Towers, from whose letter this extract is given, was at the date of the letter a member of the Faculty of Physicians and Surgeons of the City of Glasgow, and he was also an Examiner for the same ; and subsequently one of the Medical Professors in the University : and his is one of the names appended to the diploma authorizing Dr. M. to practise Surgery and Pharmacy.

In a letter to Tobias Lear, Esq., of Washington City, from John Pattison, Esq., of Glasgow, the following passage occurs, "He has practised in this City, for some time with great reputation and has most ample certificates of his medical abilities, and I have no doubt that he will prove a very valuable acquisition to your Capital." Dr. Maclean upon leaving Scotland thought of making Washington City the place of his residence.

Dr. James M. Adair of Edinburgh, a practical chemist of much note, in a letter of March 24th, 1795, addressed to

Robert Brooke, Esq., the Governor of Virginia, after requesting for Dr. Maclean the courteous attentions of both Governor and Mrs. Brooke, adds, "You will particularly oblige me by introducing him to Mr. Jefferson as a gentleman whose Chemical skill is likely to promote essentially the agriculture and manufactures of the U. S."

In the beginning of the letter Dr. Adair mentions that his friend Dr. Maclean, thinking on political subjects as his excellency and he himself did, is determined to settle in America. In a letter of the 4th of April, 1795, addressed to Mr. Laird, Merchant residing in Georgetown, D. C., Mr. Alexander Oswald of Glasgow says, "he has practised here with great ability and reputation for some years."

In a letter from Messrs. John Young & Co., Merchants of Glasgow, to their correspondents, Messrs. McLear, Cochrane & Co., of Philadelphia, the writer says, "we beg leave to recommend him to your civilities not only as our particular friend, but as a young man of merit, and whose success in whatever way he means to establish himself we have much at heart."

Mr. Macintosh, the guardian of Dr. Maclean when a youth, thus speaks of him in a letter of the date of July 29th, 1794, addressed to Walter Colquhoun, Esq., Falmouth, Va.

"Give me leave to introduce to your acquaintance and friendship, the bearer of this, Mr. John Maclean, Surgeon here, (Glasgow)—a very intimate and particular friend of mine and my family's, a young man of very eminent abilities in his profession as a Surgeon, and as a Chemist.—Perhaps you may have known his father Dr. John Maclean of this place.

This young friend of mine, who is in very respectable practise here, in his line, has taken a Fancy to settle in America, and I hope he will do well. . . . . He is a young man of the strictest honour and integrity—of good parts and knowledge, and for whom I have a very great regard and friendship, having

known him from his cradle.—And any service you can do him,—or any civilities you may show him, I shall consider just the same, as if done to a Son of my own.—And it will give me pleasure if you put it in my power—to do the same act of kindness to any friend of your house.

I again warmly recommend this young gentleman to your particular regard.

And believe me, Dear Sir,

Your Most Obedient Servant,

GEORGE MACINTOSH.

Dear Sir: Some occurrences prevented Mr. Maclean from going to America at the time he intended, and that the foregoing letter was wrote. I have now to confirm what I formerly said. And again to request your friendship and attention to Mr. Maclean, and you will thereby confer a singular favour on me.

Glasgow, 30th of March, 1795."

To these testimonials from individual gentlemen, we will append a certificate from the Faculty of Physicians and Surgeons, which is as follows:

FACULTY HALL, GLASGOW, March 30th, 1795.

We the Faculty of Physicians and Surgeons of Glasgow, considering the character and abilities of Mr. John Maclean, Surgeon, now about to leave this country, and resolving that, besides the ordinary Diploma and Certificate of his admission as one of our number, we should give some authentic testimony of our esteem for his character as a gentleman, and of our high opinion of his professional knowledge and abilities, order this our resolution to be transcribed from our books, and to be subscribed by our President and Visitor, in our name and by our authority, as a certificate of this our high opinion of Mr. Maclean's character and abilities as above stated; and as a testimony of our desire to promote the success which such qualifications deserve in whatever part of the world he may happen to reside.

(Signed) JAMES JEFFRAY, Pres.

[SEAL.] WM. COUPER, Visitor.

Dr. Jeffray was at this time Professor of Anatomy in the University of Glasgow: and Mr. Couper an eminent Surgeon and Chemist of the City of Glasgow, and a competitor with Dr. Cleghorn for the chair of Chemistry in the University.

At the beginning of his instructions, in the department of Chemistry, Dr. Maclean says that "Chemistry is the investigation of the intimate and mutual action of bodies one upon another: It discovers qualities peculiar to each substance." The latter clause seems to have been added by Dr. M. to a definition given by some one else.

The subjects handled are the following, viz.:

1. *Caloric.* 2. *Light.* 3. *Electricity.* 4. *Oxygen.*
5. *Azote*, and under this head, Atmospheric Air,
Nitrous Acid, Nitrous Gas,
Eudiometers and Nitric Acid.
6. *Hydrogen.* Water, Ammonia,
Nitrate of Ammonia.
7. *Sulphur*, Sulphurous Acid, Sulpharic Acid;
Sulphuretted Hydrogen, Sulphuret of Ammonia.
8. *Phosphorus*, Phosphoric Acid, Phosphorous Acid,
Phosphorated Hydrogen, Sulphuret of Phosphorus.
9. *Carbon*, Carbonic Acid, Carbonate of Ammonia.
Fixed or Gross Oils, Lamp-black.
Circular Wicks or many small wicks.
Volatile or Aromatic Oils, Alcohol.
Ether, Sweet oil of wine.
Camphor, Camphoric Acid.
Resins, Caoutchouc, Copal.
Sugar, Pyromucous Acid.
Oxalic Acid, Sugar Candy.
Vinous fermentation, Acetous Acid and fermentation, Acetic Acid.
Acetic Ether, Putrefactive fermentation.
Gum, Gum-resin, Starch.
Acids of different fruits, Pyroligneous Acid.
Soft parts of animals, Portable soup.
Glue, Tallow, Formic Acid, Lactic and Saccholactic Acids.
10. *Silex.*
11. *Alumine*, Pottery.

12. *Magnesia.*
13. *Lime.*
14. *Barytes.*
15. *Strontites.*
16. *Potash,* — Nitre, Gunpowder, Pot and Pearl Ashes. Caustic lye, Cream of Tartar, Salt of Tartar. Soaps, Bleaching, Glass.
17. *Soda,* — Liver of Sulphur, Glauber salts. Carbonate of Soda, Soap, Glass.
18. *Muriatic Acid.* — Oxygenated Muriatic Acid, Bleaching. Different Muriates, Glazing earthern ware, Separation of common salt from waters of Springs and the Sea.
19. *Fluoric Acid.*
20. *Boracic Acid.*
21. *Arsenic.*
22. *Molydenum.*
23. *Tungsten.*
24. *Cobalt,* — Sympathetic ink,—Zaffre,—Smalts, Azure blue.
25. *Bismuth.*
26. *Nickel.*
27. *Manganese.*
28. *Antimony.*
29. *Mercury.*
30. *Zinc.*
31. *Tin.*
32. *Lead.*
33. *Iron,* — Ink, Prussian-blue, Tin-plate.
34. *Copper.*
35. *Silver.*
36. *Gold.*
37. *Platina.*

General remarks on Metals, and on Chemical combinations.

Second Course.

Of Living or Animated bodies.

Of Vegetables.

Their structure and organization.

Of Vegetable Productions.

1. *Mucilage.*
2. *Sugar,* Wine, Rum, Vinegar.
3. *Manna.*
4. *Starch,* Farina, Bread, Malt Liquors.

Gross or Fat Oils.

Volatile Oils.

Preparation of Camphor, of Resins, of Gum-resins, Wine, and Cider.
Composition of Vegetables.
Use of vegetable mould.
Formation of soil on rocks.
Use of plowing, fallowing, and farming land.
The preparation of soil.
Food and stimulants for plants.
Possible to render rotation of crops unnecessary.
Notes on Tanning and Currying.

From the above enumeration it appears, that in his lectures on Chemistry, Dr. Maclean gave attention to the relations it sustains to Agriculture and Manufactures, as well as to those which it has to Medicine.

Electricity, although treated of in its relations to Chemistry, was more fully handled as a distinct branch of Natural Philosophy. The same remark is true of Light.

For ten or twelve years, Dr. Maclean's instructions in Chemistry were given by lectures and experiments, without the use of a text book, but upon the republication in this country, of Dr. Wm. Henry's "Epitome of Chemistry," edited with notes, by Dr. B. Silliman, Yale College, in 1808, Drs. Maclean and Silliman united in a recommendation of Mr. Henry's work, and adopted it as a text book, for their respective classes, using it in connection with their lectures. Dr. Henry was a resident of Manchester, England, a Fellow of the Royal Society, and a member of several Philosophical Societies, in Great Britain

and on the Continent of Europe. In 1819, an edition of Dr. Henry's Elements of Experimental Chemistry, was republished in Philadelphia, from the *eighth* London edition, under the supervision of Dr. Robert Hare, the eminent Professor of Chemistry in the Medical department of the University of Pennsylvania, and in 1818 a successor of Dr. Maclean in the chair of Natural Philosophy and Chemistry in the College of William and Mary, Williamsburgh, Virginia.

In the other departments of Science, he relied chiefly upon *text-books*, in conducting the studies of his pupils—adding such remarks as he deemed requisite for the further elucidation of the subjects therein handled.

The *text-books* in Mathematics appear to have been Thomas Simpson's Algebra, also his Trigonometry, plane and spherical, Robert Simpson's Euclid and his Conic sections, Playfair's Euclid, Gibson's Surveying, Moore's Navigation. It is not improbable that there were other works used in the course of the ten or eleven years, that Dr. Maclean was Professor of Mathematics, but of this the writer cannot speak with confidence.

In Natural Philosophy, the treatise used as a *text-book* for some years at least, was Enfield's "Institutes of Natural Philosophy," London, 1799. Helsham's Natural Philosophy and Nicholson's Introduction to Natural Philosophy, were also probably used during a part of the time, inasmuch as they were so used by his immediate predecessor, Dr. Minto.

In the various branches of Natural Philosophy much oral instruction was given by Dr. M., and this accompanied by numerous illustrations and experiments. His own library contained most of the more valuable works on this subject, in both the English and the French language.

The Philosophical apparatus of the College, for several years after his appointment as Professor was upon a very limited scale, and it often tasked the Professor's ingenuity to construct articles of apparatus suited to his purpose. One or two of these are still in the possession of the College, *viz.*, a small galvanic battery and a voltaic pile. These of course are now of no value other than as showing the progress since made in apparatus of this kind.

To what extent instruction was given in *Natural History*, the writer is unable to say: but more or less it was made a subject of attention and study by the successive classes. And to render the study more attractive to the pupils, especially in the department of Zoology, a valuable cabinet was purchased in 1802 by President Smith and the Professors, and offered to the Trustees at cost. To enable the Trustees to purchase this Museum, the Hon. Elias Boudinot, LL.D., gave them a tract of land in the State of New York, valued at $3,000.

In 1796, the year after Dr. Maclean began his instructions at the College, Dr. Priestley published a pamphlet entitled "Considerations on the doctrine of Phlogiston and the Decomposition of Water," which paper was reviewed, in "two lectures on Combustion supplementary to a course of lectures read at Nassau Hall," by Dr. Maclean. This review by Dr. M. was published, and with the following advertisement prefixed. "Owing to other engagements a part only of the first of these lectures was read to the students. They are now printed to save the young gentlemen the trouble of transcribing them.

J. M.

P. S. *It was not till after they were sent to the press, that I was informed Mr. Adet had published an answer to Dr. Priestley's pamphlet.*"

Mr. Adet's was written in French, and was published in Philadelphia, in 1797, about a week before Dr. Maclean's.

Mr. Adet was at this time the Minister of the French Government to this country: yet he modestly speaks of himself in the title-page of his pamphlet as a Member of the Philosophical Society of Philadelphia, &c.

Both these reviews of Dr. Priestley's article were adverse to the opinions of Dr. Priestley, and to them he gave an earnest response in another paper, dedicated to his friend Samuel Galton, Esq., of Birmingham, England, and of the date of Feb. 1st, 1800. The paper which gave rise to these Reviews by Mr. Adet and Dr. Maclean was of the date of June 15th, 1795, and was inscribed to Messrs. Perthollet, De LaPlace, Monge, Morveau, Fourcroy, and Hassinfratz:—*the surviving answerers of Mr. Kirwan.*

The discussion of the questions in these papers was continued for a time in the New York Medical Repository, by Drs. Priestley, Maclean, Woodhouse and Mitchell. The last named gentleman, one of the Editors of the Repository, endeavored to maintain a position intermediate between those of Drs. P. and M., and Dr. Woodhouse of Philadelphia while dissenting from the opinions of Dr. Priestley, on the main matter in question took occasion to reflect with severity on some of Dr. Maclean's views and experiments and his mode of stating them, which called forth from the latter a somewhat sharp reply. Dr. Woodhouse having avowed his purpose not "to be the first to drop the subject," in case Dr. Maclean, advancing nothing but what was founded upon his own experiments, should again reply to Dr. Priestley, Dr. M. says in answer, "It has been already intimated in my letter to Dr.

Mitchell which you have seen, that it is my intention to reply to Dr. Priestley; and I cannot think that I will be deterred from doing so, because you have threatened to be my impugner:—on the contrary you are welcome to make whatsoever observations you may choose on my performance, and I see no material objection to their being communicated to the public under the cover of an address to me.—At the same time be informed, you will write to one who so far from being a punctual correspondent, even his friends complain that their letters are unanswered; so it is more than probable, he will take no notice of your criticisms."

The opinions maintained by Dr. Maclean, and which are those of Lavoisier and his co-laborators in Chemical Science, have continued to hold their ground, with only such changes as the progress of that science has suggested.

A copy of Mr. Adet's pamphlet and two copies of his own were sent by Dr. Maclean to Dr. Robert Cleghorn, an eminent physician of Glasgow, and at that time the Lecturer on Chemistry in the University of that City. Dr. Maclean also forwarded to Dr. Cleghorn the numbers of the Medical Repository containing his replies to Drs. Priestley and Woodhouse: and from his wise and learned friend he received an admirable letter in reference, more especially, to his continuing the controversy in the Repository.

Dr. Cleghorn's letter is of the date of August 11th, 1800, and with some omissions it is as follows:

I received the letter you mention, and I read it with satisfaction. Not knowing the provocation you had received, or the character of your opponent, I could not judge of the propriety with which you held him up to contempt, which you do in a manner very marked tho' by no means intemperate. In the dispute your character as a Chemist and Philosopher has lost nothing; but still I wish you had not

entered into it. Your opponent, to whom no doubt Science owes much, has long been addicted to disputation in a manner more calculated to secure victory than to promote truth; and upon the subject of phlogiston he either does not think at all, or thinks with an obliquity altogether peculiar. His conviction therefore is in a good measure out of the question, nor do I think your students were in a great risk of being perverted, at least if I may judge from our's. Some things have been printed in the Monthly Magazine prefaced with great candor and professing novelty, but I have heard of none who were ever staggered by Experiments altogether devoid of precision, or inferences as loose as the premises were unfounded. I am persuaded that the very circumstance of his now standing alone will make him stand, and repeat the same unvarying objections that he has so often given in every form, except that of plain deductions from precise Experiments. I hope you will withdraw from this field as soon as you can, and prosecute at leisure those researches for which nature has qualified you beyond most men. Some of them I imagine may lead you to results unknown or imperfectly understood at present, and I would not debase these, by sending them through such a channel as you have sometimes employed, but publish them by themselves, noticing as little as possible ephemeral authors, or disputes. By declining controversy, Newton shewed his superior sagacity. It interrupts, said that great man, the tranquillity of mind most favourable to the finding of truth, and which is moreover—omni pretio majus. You will excuse this freedom in one who is your superior in years only, and I assure you it proceeds merely from the sincerity of my regard and my desire to see your abilities bent towards the discovery of truth with all their force undivided. We have here a profusion of literary news, as the Journals are innumerable and unfortunately like the Stage Coach which sets off whether there be anything in the inside or no. By the bye, your countryman Perkins, (i. e., if you be a citizen of America) is an arrant Charlatan. . . . . His tractors are bits of Brass and Iron. I had an opportunity of applying them to the immortal Mr. Watt, and I found they benefitted the wise no more than the ignorant. Of all the late publications, there is none which I wish to see so much as the Encyclopedie Methodique by Guston. The little I have seen is most admirable, but I cannot get it. Perhaps you have been more fortunate . . . . You may be thankful that my time is ended, otherwise you would have been pestered longer by your sincere friend. R. CLEGHORN.

Not only did Dr. M. take in good part his friend's advice, but he followed it; so far at least as to withdraw from all public controversy.

To Dr. Cleghorn's friendship, Dr. M. was indebted for other favours: *viz.*, for obtaining for him the degree of M.D. from the University of Aberdeen; at which University it was not necessary for him to appear personally in order to receive the degree, as was the case at Glasgow; and also by bringing about a change in the rules of the Faculty of Physicians and Surgeons of Glasgow, by which the widow of a member residing abroad could establish her claim to the usual allowance granted to the widows and children of deceased members; and in virtue of which Mrs. Maclean received, after the death of Dr. M., a valuable annuity during the remainder of her life.

The kind offices of Dr. C. just mentioned are among the matters spoken of in a letter of a previous date to that of the one given above, and which was as follows:

Glasgow, March 9th, 1798.

My Dear Sir.

Different circumstances have hitherto prevented me from thanking you for your last letter, and for the pamphlet, (his Lectures on Combustion,) which accompanied it. I have read it over with great pleasure, and in my opinion it does you credit. I showed it to all your old friends, among others to P. Wilson, who in return sends you a paper of his. I sent Dr. Rollo an account of two diabetic patients, whose cases he has published in a work well worth your attention, and I dare say you have seen it; however, I send you a copy of my cases.

From the date of your diploma you will see that you have been a Physician some time, as I took care to announce in the newspapers, but I had not sooner an opportunity of sending out your commission. If it is intercepted I am to have another without expense. Your business with the Faculty was not finally settled till last month, when I paid up your quarter contribution till the date of a minute of the Faculty which I enclose along with the papers. The receipt from the Collector I gave to Millar & Ewing, from whom I got the money for this and the graduation. . . . . On every occasion it will give me pleasure to do anything for you in this country.

Everything is advancing rapidly to a great crisis; though of what kind, heaven alone knows. We expect an invasion somewhere very soon, and volun-

tary contributions are going on everywhere through the whole island to provide the sinews of war. Everything is revolutionizing or revolutionized throughout Europe. The Pope is annihilated; Germany is dismembered, and the Swiss oligarchies are following the fate of the Venetian. Till lately we looked at the battle from afar, but now our peaceful shores are likely to be stained with much blood. Political disputes become daily more and more bitter;—every one who doubts Mr. Pitt's ability being marked as an Anarchist and an Atheist, while those who believe in him are called slaves and sycophants. Such has always been the humour of men before civil commotions—but why should I thus sermonize you who are without our vortex! The difficulty of continental intercourse keeps us very much behind. A good deal is doing by the National Institute and the Polytechnic School.

You have no doubt seen the experiments on Alum, proving that it contains a quantity of potash or ammonia, as one of its ingredients; and that the crystalization is promoted as well by the acidulous sulphate of potash as by the carbonate, nay better. Your old acquaintance Mr. Macintosh is availing himself of this in a work near Glasgow; where copperas was formerly made, and where Alum is now to be prepared also. The same gentleman with Mr. Couper and two others have taken a patent for bleaching by the oxymuriate of lime instead of potash. The lime being stirred among water exposed to oxymuriatic acid gas combines with it readily, becoming very soluble in water, and forming a bleaching liquor equal to the old in every respect, superior in some, particularly in mellowing and improving some colours injured by the other. The experiment was begun and completed by a very sensible bleacher named Tennant, and he imparted it to the others, that they might assist him to make the most of it. Charles (Macintosh) is at present in Lancashire and meets with great encouragement. He asks the profit on the saving of potash for the first six months. Your old friend C. Wilson has retired from business, having got home something considerable from the East Indies. I am glad of this on his account but not on my own, as I have received much friendship from him. Yours very sincerely.

ROBERT CLEGHORN.

The following letter from George Macintosh, Esq., makes mention of Dr. Cleghorn, and also shows that he also expected that Dr. Maclean would make valuable additions to the stock of Chemical knowledge:

GLASGOW, 6th of December, 1795.

MY DEAR JOHN.

Your letter of the 8th of July I received, which afforded this family and many more of your friends much satisfaction. . . . . We were all glad to hear that you met with such civilities in New York and Philadelphia, and I am much indebted to Mr. Ross for his attention. We are all particularly happy, at your appointment to the Professorship of Chemistry in the College of New Jersey,—and on which I hope I may congratulate you, being a thing I am sure will suit your genius and for which I am sure you are well qualified; and I doubt not of your making many useful and important discoveries in the line of your new profession. . . . . Dr. Hope is called to Edinburgh to be assistant and successor to Dr. Black, and has left this College. The Medical Class is in the meantime supplied by Dr. Cleghorn, who is a candidate and so is Dr. Couper. It is yet uncertain who will succeed. It is the King's presentation. I believe the Professors are for Cleghorn. . . . . Now John write me often. You know all this family is warmly interested in you, and be as particular as you can.—Polly is in Edinburgh, Mrs. Mac, Fanny and Miss Grant desire their best wishes. I am My Dear John, yours,

GEORGE MACINTOSH.

But it may be asked, how it came, that with all his marked ability for scientific investigations, he did so little as a Discoverer in his favourite department? The answer to this inquiry is a very simple one. Upon becoming Professor of Mathematics and Natural Philosophy as well as of Chemistry and Natural History, including the whole range of scientific subjects connected with the department of the Arts, his time was so occupied with the business of teaching day after day, that he had little or no leisure for original research; and not even for a regular correspondence with his friends. Moreover his share in the government of the College, and sundry incidental duties, arising from the small number of College officers, made such demands upon his time and attention as to forbid his devoting himself to any continued series of original experiments such as are essential to the advancement of science.

Yet he kept himself fully posted with regard to discoveries in all departments of scientific research ; and when it was at all practicable he repeated the experiments of the most distinguished philosophers of the day.

Although he made no further publication of his views than such as resulted from the reading to his classes of a course of lectures accompanied with experiments and oral explanations, yet it is by no means improbable, that he continued to hold an advanced position among the cultivators of Chemical learning.

It is much to be regretted, that so many men, admirably qualified to enlarge the boundaries of knowledge, are compelled to devote their time and strength almost exclusively to the instruction of youth in the mere elements of science, and that in order to obtain a bare support for themselves and their families, who, if possessed of means, and allowed to devote a goodly portion of their time to scientific researches, and furnished with suitable works and apparatus, and also the materials requisite for experimenting, would gladly and successfully have given themselves to the advancement of knowledge as well as to its diffusion.

Dr. Cleghorn's remarks respecting Dr. Perkins' "metallic tractors," given above, were probably called forth by the following passage in one of Dr. Maclean's letters to him.

"You have doubtless heard of Dr. Perkins' famous Metallic points—they certainly have afforded relief in several cases of superficial pain and inflammation. But Dr. Mitchell of New York has found the same benefit from the use of other hard pointed substances. I have been told by a gentleman from Maryland that it is common in that country to rub the blade of a knife over a rheumatic joint:—From the Philosophical transactions it seems that much good has resulted from rubbing with the hand, and every Scotchman has been relieved by scratching."

From this last remark it appears that Dr. M. had not a very high estimate of the value of Dr. Perkins' discovery.

From his correspondence with Dr. Cleghorn it appears that before and after leaving Scotland, he made various experiments with lime and sulphur, instituting first a series of experiments for the separating of all crude substances from pot and pearl ashes, by means of sulphur combined with lime. His experiments, in the last mentioned case, were made before he left Scotland; but in the hands of the gentleman with whom his papers on this subject were left, they were not repeated with the hoped for success. After his arrival in America he did not pursue the matter, partly for want of time, and also for want of the requisite facilities.

With respect to the Medicinal use of lime and sulphur in solution; or to speak more exactly, of the *Sulphuret of Lime* in solution he mentions to Dr. C. several cases of their efficacy, in a variety of disorders; and more especially of their effecting an entire cure of certain cutaneous eruptions; and these of a severe character. One instance was that of his partner in the practice of Physic and Surgery, who for two years suffered from a severe sore on one of his lips, which he was apprehensive would prove to be a cancer, but which was effectually cured by taking internally, every day, for three months, a solution of the Sulphuret of Lime in water, and by washing the sore with a portion of the same solution. Sulphur alone is not soluble in water, but the sulphuret of lime is; and he gives this as his reason for his preference of the sulphuret to the simple sulphur in all cases, in which it is expedient to use sulphur medicinally.

Although the copy of Dr. Maclean's letter, in which these things are spoken of is without date, yet the following extract from this letter, in another part of it, enables the writer to

determine the year in which it was written; as in it mention is made of the decease of his colleague Dr. Minto, and of his own appointment to succeed this gentleman, who died in the Autumn of 1796.

"Since I wrote to you last I have received another appointment. Dr. Walter Minto with whom I believe you were acquainted, and who was our Professor of Mathematics and Natural Philosophy, died about six months ago. I was asked by the Trustees of the College to teach the Natural Philosophy, and at an adjourned meeting in the Spring they appointed me without the smallest solicitation successor to Dr. Minto, although there were two candidates; one a professor in Maryland; and that I informed them, that I was not qualified to teach the Mathematics. My salary is two hundred and fifty pounds a year, with permission to employ a person to teach the Mathematics until I shall be able to do it."

Had the state of the College funds admitted of the expense, it would have been better for the College and also for Dr. Maclean himself that he should have continued to hold simply his appointment as Professor of Chemistry and Natural History, and that another person should been chosen Professor of Mathematics and Natural Philosophy, or as was the case some years after, there should have been established at this time a distinct Professorship of Mathematics and Astronomy. Such an arrangement would have left the Professor of Chemistry free to devote a considerable portion of his time to original research in the domains of Chemistry and of Physics:—and that too at a time when his ardor in this direction was unabated, and the strength of his early manhood would have enabled him to toil assiduously for the advancement of his favourite study and of his own reputation.

On the 7th of November 1798, Dr. Maclean was united in marriage to Phebe Bainbridge, eldest daughter of Absalom Bainbridge, practitioner of Medicine, in the City of New York, and a sister of Commodore William Bainbridge, U. S. N.

Mrs. Maclean's mother was Mary Taylor, only daughter of John Taylor, Esq., of Middletown, N. J., a descendant of a family settled in England, at the time of the Norman invasion. See Burke's Landed Gentry, London, 1838.

In the year 1798, occurred the famous rebellion of the United Irishmen, and its defeat brought to Princeton two remarkable persons: one, Mrs. Tone, the widow of Theobald Wolfe Tone the leader of the rebellion; and the other, Mr. Robert Adrain, a young Irishman of talent, and who had a great fondness for Mathematical studies, and manifested unusual skill in the handling of them. Having taken an active part in the uprising of his countrymen against the established government, he was compelled to leave Ireland: and this induced him to seek a refuge in the United States. The yellow fever being in New York at the time of his arrival in that city, he came to Princeton, and being a good classical scholar, he readily obtained an appointment as teacher of the Grammar school, then vacant; and for two years or more he here taught and studied, and prepared the way for attaining the eminence he afterwards reached as one of the foremost Mathematicians of our land. From Princeton he removed first to York, Pennsylvania, and afterwards to Reading in the same State; from which latter place he was called to the Professorship of Mathematics and Natural Philosophy in Queens (now Rutgers) College, New Brunswick, N. J. From Queens College, Dr. Adrain went to Columbia College, New York City, and after some years returned to New Brunswick.

Dr. Maclean, who knew him well, and was on intimate terms with him, being asked his opinion of Mr. Adrain's fitness for this position, said the only objection he had to recommend-

ing Mr. A. was that he deemed it hardly becoming in him to recommend one who, in the department of Mathematics, was so superior to himself.

In the summer of 1795, the year in which Dr. Maclean arrived in America, Theobald Wolfe Tone left Ireland, with his family, and came to this country. Soon after his arrival, he leased or purchased a small farm in Princeton, or its vicinity. He remained here however only a short time, the way having been opened for his going to France, and taking part in the efforts on foot for the liberation of Ireland from British rule. His family accompanied him: but after the death of her husband, Mrs. Tone, with her surviving child, returned, and again made Princeton her temporary home.

The tragic death of her husband, and the defeat of his enterprise in behalf of Irish Independence, served to enlist the kind feelings of Dr. M. in behalf of Mrs. Tone and her son—and hence there arose an intimacy between the two families, which continued during life.

The following letter from Mrs. Tone to Dr. Maclean will not prove uninteresting to such as may be disposed to read this Memoir:

"At Mrs. Wade's, 162 Greenwich St., New York.

MY DEAR SIR:

I have just now been able to engage my passage on the Brig, Three Apprentices, Captain Mariner, for Bordeaux. We are to sail next Sunday; the accommodations are excellent. The Captain is a good man and a gentleman, his wife a nice little French woman, and one of the owners of the ship goes with us. So all that promises well. I am just interrupted by your letter which I received with pleasure. I could scold you for saying that you could not make the time passed with you agreeable enough. I assure you that I often recall the placid and amiable days I spent at Princeton, and I shall ever remember them with kindly and affectionate regret. I scarcely think we shall ever meet again. Since my

return here, Dr. McNevin and Mr. Emmet have spoken much to me on the subject of William, (her only child). It is their opinion that his adopting a sea-faring life as a profession is the only chance to save him. They were not aware what a dreadful blow they gave me: but it is certainly always the best to know the truth. I purpose passing the winter in the South of France. If that does not succeed in restoring his health, and he is obliged to go to sea, I feel that my travels will be as completely over as if he died,—but enough of this croaking.

I have received the medallion; it is elegant and grateful to my feelings. William is so pleased with his sword, he takes it to bed with him. You will see an account of it in the paper to morrow, with the address to me and my answer. You would have laughed at me, had you seen me when the committee waited on me. I quite trembled and looked like a fool, and could not say a word; and under the idea that my answer was to appear I could hardly write plain English, or common sense. Don't be so cruel as your countrymen, the reviewers, when you read it. I assure you I thought of them when I wrote it.

Dr. Reynold has sent what he calls a justification of himself to Emmet and McNevin. He accuses me of having become English, and says, *with her new connections she has adopted a new style.* I suppose he alludes to the English gentleman I knew at Philadelphia: but I think I should be wanting to myself even to ask his meaning. Indeed I was ashamed for him when I saw the account he sent: but scandalous as it is, he only brings it to what he says he got for the Books. So even by his own account, I was warranted in expecting their value, till he told me how he disposed of them. He says, that I accuse him of having received and secreted large sums from my brother-in-law, Wm. Tone, in the East Indies. I wonder if his own conscience accuses him of it, for his letter is the first I heard of the accusation. Indeed I heard of some copies of a Book written by William, which arrived here after we had sailed for France, a circumstance I had forgotten till his letter brought it to my mind, he slides over the affair of the journals. I hoped to have seen Mr. Maclean, (Mr. Hugh Maclean, then of New York,) before this. I want to send you some Irish History before I go. Unless you point out some other way, I shall send them enclosed to Mr. Gifford, (the Hotel keeper, in Princeton, at whose house the stages were wont to stop,) by the mail, and write at the same time by post.

My best love to Mrs. Maclean and the little ones.

Believe me most affectionately yours,

M. Tone.

P. S.—I can get a letter from Captain Walsh to Mr. Bernard's nephew. William sends his love to you and all the family. If you are not too lazy to write to

me again, it will give me much pleasure. Tell me *truly* what you think of William and the sea."

Instead of going to sea as a business for life, he was admitted by Napoleon into the Military School of France, and entered the Army. But upon the downfall of the first Empire he returned to America, and received from the United States government a commission of Lieutenant in the artillery branch of the service.

In 1824 he prepared a work entitled, "A System of Instruction for the Cavalry of the United States," and in 1826 he published his father's autobiography, with some account of his own earlier years. In this year he also resigned his place in the Army, and returned to private life.

Mr. and Mrs. Liston (afterwards Sir Robert and Lady Liston) of Scotland, came to the United States early in the spring of 1796, Mr. Liston having received from the English Government the appointment of Envoy to this country. They were intimate friends of Mr. and Mrs. George Macintosh of Glasgow, and particular acquaintances of Dr. Maclean, and also of some of his mother's family. Mrs. Liston was a native of Antigua, but had resided from infancy with relatives in Glasgow. In 1799, the year after Dr. Maclean's marriage, they visited Princeton, and this led to a friendly correspondence between them and Dr. M., on business and matters of courtesy, Mr. Liston being desirous to secure his kind offices in behalf of a youth of Scotch parentage, about to enter the College, from Alexandria, Va., and at another time in behalf of the Rev. Robert Balfour, of Glasgow, whose friends wished to obtain for him the degree of Doctor of Divinity. The degree was conferred by this College, at the Commencement of 1802.

Dr. Balfour became a minister of much note, and an extended notice of him is given in Chambers' Biographical Dictionary.

Dr. Maclean's father, as mentioned in the beginning of this Memoir, was an officer in the British Army at the capture of Quebec, and was entitled to a large bounty in land for his services, but did not pursue his claim, and never received the grant. Availing himself of the opportunity presented by Mr. Liston's sojourn in this country, he wrote to him and informed him of the facts in the case. To his letter he received the following reply:

Philadelphia, 22nd of April, 1800.

My Dear Sir:

It would give me great pleasure to have it in my power to be of any service to you in respect to the property to which you appear to have a claim in His Majesty's American dominions.—I will take care to put the Governor of Canada on his guard against giving his sanction to any act that might be calculated to confirm the injustice you allude to.—And if, as I hope, I obtain leave to visit the province in the course of the next summer, I will endeavour to obtain that information with regard to the lands set apart for such officers as have served in America, as I find it impossible to procure in my present situation.

I beg you will believe me to be, with perfect truth and regard, my dear sir,

Your most faithful, humble servant,

Rob. Liston.

Mr. Liston's return to Scotland probably interfered with his visiting Canada, as he had intended to do when he wrote to Dr. Maclean. At any rate they had no further correspondence on this subject, and Dr. Maclean, it is believed, made no further effort to establish his claim.

One of Mrs. Liston's letters is of the date June 30th, 1799, and the next, from Albany, of the date August 5th, of the same year—is as follows:

Dear Sir:

I received your favour and feel myself much obliged by your kind offices in my request to Dr. Smith. I am anxious Mr. Balfour should be put in nomination

in September. You will oblige me by saying, (for me,) what is proper to Dr. Smith upon this occasion.

We have finished our excursion to the Lakes—George and Champlain. Mr. Liston has been here two days or three, only to dispatch the August Packet—it goes off this morning, and in the afternoon we set out for *Niagara*. Betwixt writing and packing I have scarcely this moment to command: but as you mentioned September, and it will be the first or second week of the month before we return, I thought it proper to write however short. I must trust to your friendship, certain that it is in the best hands, and we must wait with patience the result.

Mr. Liston and the gentlemen beg their best respects, and join in kind remembrance to Mrs. Maclean. Believe me, sir, at all times

Your very sincere and affectionate friend,

HENRIETTA LISTON.

The gentlemen referred to were two friends of Mr. and Mrs. Liston, most probably attaches to the Mission. In Mr. Liston's letter of the 30th of June they are spoken of as Mr. Thornton and Lord Henry.

Professor Silliman, Senior of Yale College, in speaking of men of note in Edinburg, whose acquaintance he made during his residence of a few months in that city, writes thus of Mr. and Mrs. Liston:

"Among the celebrities of Edinburg, Mr. Liston (afterwards Sir Robert Liston) must not be forgotten. Probably he had no more to do with science than the Earl of Moira; for, unlike him, he had passed a public life, not in the field, but accredited as a minister to most of the cabinets of Europe, and to that of the United States.

He had had therefore an opportunity to study the science of government. From Henry Thornton, Esq., M. P., I had brought a letter of introduction to a venerable friend of his, Mr. R. S. Moncrieff; and he was on terms of intimacy with Mr. Liston. Mr. Moncrieff, knowing that I bore a letter from Colonel Pickering to Mr. Liston, proposed that we should ride out together on horseback to Mr. Liston's residence at Milbourne, five miles from Edinburgh, in season for breakfast. We were received by Mrs. Liston with great politeness, and then by her husband, who was called in from the field, where he was directing the agricultural operations of spring. During the administration of General Washington,

Mr. Liston had been long resident minister of Great Britain at the American court, which was then held in Philadelphia. They (Mr. and Mrs. Liston) both retained the kindest recollections of their American residence, and Mrs. Liston cherished a small American garden devoted to our trees, shrubs and plants, and into that garden she admitted nothing that was not of trans-atlantic origin. I looked with peculiar interest to these natives of my country. We found these interesting people living in all the simplicity and retirement of rural life. Their house, a neat stone cottage, was of one story with a thatched roof, and had a few handsome rooms. It was situated in the midst of a farm which Mr. Liston cultivated, not without personal toil. His person was tall and dignified, his manners presented a model of graceful simplicity, and his conversation was highly intelligent, instructive and agreeable. We took breakfast in a small octagonal apartment resembling a ship's cabin, and lighted from above. Mrs. Liston did the honours of the occasion with much dignity and affability. Their sentiments on the United States, its affairs, its government and the prospect of the pre-eminency of its institutions were highly favourable. Mr. Liston was now in retirement and appeared to be past sixty years of age. A revolution of parties having recently taken place, and the party of Mr. Fox having come into power, allusion was made to that fact, and to the probability that Mr. Liston would soon be called again into public life, when he replied: 'if they want me, they know where to find me,' and I believe (adds Dr. Silliman) he was soon after sent on a foreign mission."—

In a letter to Dr. Maclean, of the date of August 4th, 1799, from his cousin Miss Mary Maclean, of Glasgow, mention is made of Mrs. Liston, as giving his friends in Scotland their first information respecting his marriage, and as saying, "Mrs. Maclean is a sweet gentle Girl, and resembles his mother." Miss Maclean, the writer of this letter, was a first cousin of his, a little older than he, a woman of superior intellect, his attached friend and correspondent, to whom he was indebted for most of the information he received respecting his friends in Scotland, and whose kindness to Dr. Maclean's family ceased only at her death, which occurred in 1849. To Mary B. Maclean and Agnes Maclean, daughters of Dr. M., she bequeathed

the greater part of her small estate, and in case of their decease to their surviving brothers. Not only so, but she obtained for Dr. M.'s children, from his maternal relatives, two or three valuable bequests, and aided Mrs. Maclean in presenting her claim for an annuity to the Faculty of Physicians and Surgeons of Glasgow.

Miss Maclean had a sister and three brothers, all of whom died before her, and unmarried; and she appears to have always looked upon her cousin Dr. M. as a brother, as in the letter here referred to she says this was the case, and assigns it as her reason for urging him to write to her more frequently than he had done. After mentioning what Mrs. Liston had said respecting Mrs. Maclean, she adds:

"Although I have not the smallest chance of ever being personally acquainted with her, which I regret much, I shall ever feel myself warmly interested in her, and in all your concerns,—and hearing of your Health and happiness will at all times yield me inexpressible pleasure: do I beseech you write me soon."—

"Who do you think was married the other day, but your old *friend* and *flame*, Charlotte *Grant*, to a Mr. Smith, a manufacturer in Glasgow, Nephew to Mr. Wardlaw. I dare say you may know him. Mr. and Mrs. Macintosh quite delighted with the match. They both went to the North to the marriage; I am truly pleased she has a home of her own."

Miss Grant was a relative of the Rev. Mr. Grant of Laggan, and the intimacy which sprang up between Mrs. Grant and Mr. and Mrs. Macintosh was due to the very kind attentions paid by Mr. and Mrs. M. to Miss Grant, upon her first going to Glasgow.

Miss M. concludes her letter thus:

"Be sure to offer my best and kindest wishes to Mrs. McLean. I hope she will have the goodness to entreat you to lay aside that lazy fit you have taken, and once more write me."

I shall ever remain your affectionate cousin,

MARY MCLEAN.

At the time of Dr. Maclean's marriage, in 1798, the College had no dwelling for a Professor's family, but in 1800 the Trustees ordered a building to be erected on the College grounds for the accommodation of Dr. M. and his family, the Dr. having engaged to pay a rent equal to the interest of the money it should cost. Previously to the erection of this building, Dr. and Mrs. Maclean were kindly permitted to occupy a number of rooms sufficient for their accommodation at that time, in the dwelling house of their friend, Dr. E. Stockton; where they remained until their removal to the house erected for them. On the 6th of March, 1802, the principal edifice of the College—the one known as Nassau Hall—was totally destroyed by fire, with the exception of the walls, which were of stone and brick, the outer walls being of stone, the inner ones of brick. This occurrence at one time seemed to threaten the destruction of the Professor's house, but happily, the wind shifting its course, the house escaped, and proved to be of use not only in furnishing a residence for the Professor and his small family, but also for a time a lecture or recitation room for the students, and lodgings for two or three of them.

The burning of the main edifice, which was intentionally set on fire, although embarrassing for a year or more to all interested in the welfare of the institution, proved in the end to be the occasion of its increase and of a success surpassing anything in its previous history. Not only the special friends of the College, but friends of learning and piety throughout the country, came to the help of the trustees, and by the liberal contributions received from the Eastern, Middle and Southern States, they were enabled to restore Nassau Hall to more than its former state, and to erect two additional buildings, which

furnished for that period in its history ample accommodations for its library, its philosophical apparatus, its lectures and recitations, and for the boarding of the students.

With the increase of means for the better accommodation of students, came also a large increase in the number of students; viz., from 100 to 200. Additional professorships were established. Instead of a President and *one* Professor, with two or three Tutors, as was the case before the burning, the Faculty in 1804 consisted of the President, *four* Professors, and double the usual number of students. Both before and after this enlargement a teacher of French was engaged to teach such students, as desired it, the French language.

This new arrangement relieved Dr. Maclean from the task of instructing the classes in mathematics and astronomy, but the increase in the numbers called in various ways for an increase of the demands on his time. As Senior Professor he had often much to do in looking after the discipline of the institution and also its general interests. And, in fact, at this time and for many years after, if not now, the duties of a Professor, outside of the giving of instruction in his own particular department, were more exacting and burdensome than those pertaining to the matter of teaching, and left him but little time for private study; at least comparatively with what an active mind would desire.

The sudden and great prosperity of the College here referred to was followed, in the course of a few years, by a serious disturbance, commonly called the rebellion of 1807, which led to a suspension of the College exercises for a short time, and to the expulsion of a number of the students, which circumstances, together with the feeble health of the President and

the successive resignations of the more recently appointed Professors, from one cause and another, led to an unfavorable change in the condition of the College, and ultimately to an entire reorganization of the Faculty, in the autumn of 1812, when, as before mentioned, Dr. Maclean resigned his chair at Princeton, and accepted the position of Professor of Natural Philosophy and Chemistry in William and Mary College, Virginia.

The esteem in which Dr. Maclean was held as an instructer in both these institutions, may be inferred from the following extracts from various notices of him after his decease, and from sundry letters addressed to him, upon his resigning the chairs he occupied successively at Princeton and at Williamsburgh.

In President Fisher's Life of Benjamin Silliman, M.D., LL.D., the first Professor of Chemistry in Yale College, the following passage is given from Professor Silliman's Diary, vol. I, pp. 109, 110:

"Brief Residence in Princeton.—At this celebrated seat of learning, an eminent gentleman, Dr. John Maclean, resided as Professor of Chemistry, &c. I early attained an introduction to him by correspondence, and he favoured me with a list of books for the promotion of my studies; among them Chaptal's, Lavoisier's and Fourcroy's Chemistry, Scheele's Essays, Bergman's Works, Kirwan's Mineralogy, &c. I also passed a few days with Dr. Maclean, in my different transits to and from Philadelphia, and obtained from him a general insight into my future occupation; inspected his library and apparatus, and obtained his advice respecting many things. Dr. Maclean was a man of brilliant mind, with all the acuteness of his native Scotland; and a sparkling wit gave variety to his conversation. I regard him as my earliest master in chemistry, and Princeton as my starting point in that pursuit: although I had not an opportunity to attend any lectures there."

[The reader will doubtless pardon the writer for inserting, in a note, the next two sentences: "Mrs. Maclean was a lovely woman, and made my visits at the house very pleasant to me. She was the sister of Commodore Bainbridge, after-

wards signalized by the capture of the British frigate *Java*, in the war of 1812–15. Mrs. Maclean gave me an introduction to the family of Commodore Bainbridge in Philadelphia, in which I was an occasional visitor."]

Many years after Dr. Maclean's death, Dr. Silliman made another, and his last, visit to Princeton; and on this occasion he said to the writer, upon visiting the chemical laboratory: "It was in this room that I saw the first experiments in chemistry ever witnessed by me."

In an article, written for the American Edition of Lempriere's Biographical Dictionary, the Rev. Dr. Samuel Miller says of Dr. Maclean:

"As a physician, a surgeon, a natural philosopher, a mathematician, and, above all, a chymist, Dr. Maclean was very eminent. As a college officer he was uncommonly popular and useful."

The Rev. Dr. Archibald Alexander, in giving an account of a visit made by him to Princeton in 1801, eleven years before he became a resident of this place, has this remark respecting Dr. M.:

"Dr. Maclean emigrated to America in 1795, and became one of the most popular professors who ever graced the College. He was at home almost equally in all branches of science. Chemistry, natural history, mathematics and natural philosophy successively claimed his attention."

Upon the resignation of Dr. Maclean, the trustees of the College of New Jersey passed the following resolution:

"Resolved, That the thanks of this board be given to Dr. John Maclean, for the long, various and important services which he has rendered to this Institution as professor in the same.

"Ordered that the clerk wait on Dr. Maclean and give him a copy of this resolution."

The Senior and Junior Classes, which two classes at that time comprised the great body of the students, severally ad-

dressed to Dr. M. letters expressive of their great respect and esteem for him, and of their sincere regret at his leaving the institution. The Senior and Junior classes of each successive year were the only ones which were instructed by Dr. Maclean.

Dr. Maclean, upon leaving Princeton for Williamsburgh, deemed it inexpedient to take his family with him, as at this very time, October, 1812, there was a large British fleet in the contiguous waters, from which fleet frequent hostile excursions were made to various places adjacent to the sea coast. At Williamsburgh Dr. Maclean remained until the beginning of the ensuing summer, or the close of the college year, when he returned to Princeton. Some weeks before leaving Williamsburgh on a visit to his family, he had a severe attack of bilious fever, from which, however, he recovered sufficiently to be able to travel in a stage coach as far as Princeton; and he and his friends hoped that the invigorating air of this place would speedily restore him to his usually firm and vigorous health. But these hopes were destined to a sad disappointment; and when the time arrived for him to go back to Williamsburgh he was too feeble to do so, and he was compelled to send to the Visitors of the College his resignation. The fever, indeed, had been subdued, but it was followed by jaundice and by dropsy, from the combined force of which he gradually sank, until the 17th of the ensuing February, when he departed this life. At or about the time that he sent his resignation to the Visitors of the College, he wrote to his friend and colleague there, Professor Ferdinand Stewart Campbell, who sent him a long letter in reply, giving him information respecting the affairs of the College, and also in regard to several of his ac-

quaintances. The date of Professor Campbell's letter is Nov. 1st, 1813, and the first paragraph is as follows:

"My Dear Sir:

I would have answered your friendly letter immediately after its reception, but concluded to wait, until I could be able to give you some intelligence relative to the arrangements of the College. In the first place, however, I must express my unfeigned regret that it does not comport with your views to return to Virginia: for here you had formed many acquaintances, and acquired friends, whose highest gratification would have been to see you permanently settled amongst them."

Professor Campbell was a brother of the poet Thomas Campbell, author of the Pleasures of Hope and other well-known works, if the writer's memory does not fail him, in regard to what he heard on this head, sixty years ago. To inherit a valuable estate in Scotland, Professor Campbell took the name of Stewart, which was previously his middle name.

In regard to Dr. Maclean's character, as a gentleman, a scholar and a teacher, the testimony is uniform, that he held an eminent rank among his cotemporaries.

The last public tribute to Dr. Maclean, as a cultivator and teacher of chemical science, is in a recent essay by the younger Professor Silliman of Yale College, in an article entitled "American Contributions to Chemistry," and read at a meeting held at Northumberland, Pa., on the 31st of July, 1874, to celebrate the Priestley centennial of chemistry. Published in the American Chemist, for August and September, 1874, page 73.

"*Chemistry prior to the Commencement of the Present Century.*—Of the public seminaries of learning other than medical institutions, where Chemistry was taught from a separate chair, and as a distinct branch of the College curriculum of instruction prior to 1800, we find but one, and this distinction belongs to Nassau Hall, Princeton, New Jersey."

"On the 1st of October, 1795, the day after the annual commencement in that year, the trustees of that institution elected Dr. John Maclean Professor of Chemistry. He was a young chemist of Scotland, fresh from the instruction of Hope and Black and the French school. But it is only just to add, that Dr. Maclean, on the death of his colleague in the chair of mathematics and natural philosophy, assumed these duties in addition to those of chemistry. Dr. Maclean ever deserves honourable mention as one of the earliest and most successful teachers of our science in this country. Professor Silliman in his reminiscences gratefully recognizes his obligations to Dr. Maclean and to Princeton. He says (vol. I., page 110, Fisher's Life): 'I regard him as my earliest master in chemistry, and Princeton as my starting point in that pursuit.' Dr. Maclean, in 1812, accepted the chemical chair in William and Mary College, Virginia. In Paris Dr. Maclean learned to admire the antiphlogistic theory, as the 'new chemistry' of Lavoisier was then called, and which he taught and defended at Princeton. In 1795 he published 'Two Lectures on Combustion, Supplementary to a Course of Lectures on Chemistry, Read at Nassau Hall, Containing an Examination of Dr. Priestley's Considerations on the Doctrine of Phlogiston and the Decomposition of Water.' These lectures display both ability and learning, and form an interesting chapter in the history of phlogistic discussion."

"Dr. Maclean contributed several articles to the New York *Medical Repository*, and his name is associated with that of Professor Silliman in editing the first American Edition of Henry's Chemistry, in 1808,"

or rather, in a joint recommendation of the work, and in adopting it as the text-book on chemistry for their respective classes.

Had Dr. Maclean recovered his health in the autumn of 1813 he would in all probability have been invited to take charge of the Albany Academy, in connection with his friend, the Rev. Dr. James Carnahan, whose health forbade his continuing in the active duties of the ministry. Several of its leading friends were desirous to secure their services for this institution, then just projected or established: but the death of Dr. Maclean, on the 17th of February, following the removal of Dr. Carnahan to Georgetown, D. C., led

them to make other arrangements for their new Academy. To the hope or expectation that Dr. Maclean would make his home in Albany, reference is made in the following letter from the Rev. Samuel Finley Snowden, by whom, when he was Pastor of the Presbyterian church in Princeton, Dr. and Mrs. Maclean were married, in the autumn of 1798.

"Accept, my dear Madam, the sincerest and tenderest condolence of your affectionate friend, Mrs. Snowden, together with my own, in the severe affliction with which the Almighty has seen proper, in his wise and holy providence, to visit you, in the death of your husband, so much esteemed and so greatly lamented by us both. How delusive are the hopes of man! While we were flattering ourselves that we should have both yourself and him and your lovely family nearer still to us, (*for we had heard, that there was a proposal for the Dr.'s being settled at Albany,*) we received the very unexpected and painful intelligence of his removal from this vale of sorrow.

Little can mortals do for the comfort of the bereaved. It is God only, who can administer effectual relief. Confidence in his care, as a reconciled Father in Christ, will support the soul, and by drawing more closely the ties of affection and dependence convert afflictions into blessings.—I hope you enjoy that source of consolation, which will last when all others fail.

If we can render you any service, it will afford the greatest pleasure to do it. We should be exceedingly happy to hear particularly from you.

Mrs. Snowden joins in love to you and the children. Samuel is residing at Cazenovia. If he were at home, he would desire to be particularly remembered to Master John. Mrs. Maclean, I remain, my dear Madam,

Your sincere friend,
SAMUEL F. SNOWDEN.

New Hartford, State of New York, May 6th, 1814."

In June, 1799, Dr. Maclean was chosen a corresponding member of "The Academy of Medicine of Philadelphia," of which Society Dr. Philip S. Physick was at this time the President, and Dr. John C. Otto, the Secretary.

And in January, 1805, Dr. M. was chosen a member of the American Philosophical Society. The letter, a highly compli-

mentary one, informing him of his election, is signed by Dr. Thomas C. James, the Corresponding Secretary.

In December, 1807, he was admitted to all the rights and privileges of a citizen of the United States, pursuant to the laws of the same, by the Circuit Court of New Jersey, in session at New Brunswick.

There are two facts, in reference to Dr. Maclean, concerning which there can be no question:

1st, As a teacher of chemistry, he had in his day no superior in this country;

2nd, That as a College officer no one was ever held in higher respect and esteem by his pupils.

The testimonies cited in this memoir are sufficient to establish both these facts; and if it were necessary, additional testimony could be adduced in support of what is here claimed for him.

It was thought and said by many that he was equally at home in the various departments of science; but he made no such claim for himself; and although his talents were of an order such as would have enabled him to excel in any branch of study to which he might have devoted himself, yet to certain parts of the College course he gave no further attention than was sufficient to instruct his pupils thoroughly in them. And in teaching, his aim was to make his pupils perfectly familiar with what they professed to study, rather than to impart to them a smattering of a great variety of knowledge, which could serve no other end than to render their studies of the least possible use to themselves or others.

The following anecdote will serve to show the stress he laid on perfect accuracy both in giving and receiving instruction:

His classical teacher having left Princeton, soon after the writer's entrance upon the study of the Latin language, Dr. Maclean directed his son to prepare and to recite to him a lesson in Cordery's Colloquies, the book which the writer was attempting to read, when his teacher left. He had scarcely begun to recite, before his father discovered his defective knowledge of the grammar of the language, and at once the order was to put aside "the Colloquies" and to take up the grammar, with this injunction, "Prepare for *a lesson* just as much as you please, but get *every letter* of it,"—which itself was the most instructive lesson he ever received from anyone, with respect to his studies. On one occasion, when his son was repeating the different prepositions which govern the ablative case of the gerund, Dr. M. thought that his son had overlooked one of the prepositions in the book, and several different times he sent him away to prepare the lesson more perfectly. Finally satisfied that he had given all the prepositions mentioned in the grammar, he brought to his father the book itself and insisted that he was right; to which his father assented, with the remark that the defect was in the book itself.

In family government he combined strict authority with freedom of approach and even playfulness of manner, in his intercourse with his children. He often took part in their amusements, and encouraged them to engage in such innocent sports as would serve to promote strength and activity of limb. On one occasion some young robins having fallen from their nest in a large willow tree, he said to his oldest son, then a lad of about 9 or 10 years of age: "if you will climb that tree and put these young robins back in their nest, I will give you a

quarter of a dollar." The son did it, and from it learned a two-fold lesson: one in climbing, and the other in the proper treatment of innocent birds, both of which he turned to account in after life; and to the first of which some of his own pupils could give ample testimony.

Dr. M. never made a public profession of his faith in Christ, other than such an one as was involved in the baptism of his children, and in his punctual attendance upon the public services of the sanctuary, and in contributing to the support of these services; but towards the close of life there was with him a growing conviction of the unspeakable importance of a vital union with Christ as the only Saviour of lost and guilty men, and he cherished a hope, that through grace he was prepared for his departure, which he saw was surely and gradually approaching. Had he recovered his health, it was his purpose to establish family worship and also to make an open avowal of his faith in Christ. The Rev. Wm. C. Schenck, Pastor of the church the public services of which Dr. M. and his family were wont to attend, had several interviews with him during his last illness, and in his funeral discourse spoke of them as furnishing evidence that he had departed in the hope of a happy resurrection, through faith in Christ.

In a letter of Nov. 7, 1812, to his oldest son, some fifteen months before his death, he thus writes: "And now, my dear John, having done with business, let me as one most solicitous for your welfare entreat you to pray to God every morning and evening, read your Bible, attend church regularly, and pay respect to your mother. If you do, it will be setting a good example to your younger brothers, and be a source of happiness to yourself."

His feeble health for several months before his decease, his narrow circumstances, and the inadequate provision he was able to make, for the keeping of his family together, and the

education of six children, four sons and two daughters, naturally gave him no little anxiety, notwithstanding his hope that in the good providence of God they would receive, under the guardianship of their excellent mother, a training that would enable them to take care of themselves and to be of use to others. In this trying position, his mind must have been greatly relieved by the following letter from his brother-in-law, the late Commodore Wm. Bainbridge:

Navy Yard, Charlestown, (Massachusetts), 7th of February, 1814.

My Dear Sir:

It is with deep concern, that I learn by a letter from your wife to our sister Mary, that your health is declining, instead of mending as I had ardently hoped. I yet trust that it will be restored to you, having experienced myself most severe bilious attacks, and having been left months afterwards in an alarming state of threatening disease. I therefore consider myself from experience, although no physician, a good adviser—and will offer you my opinion on your case.

Keep up your spirits, and as soon as the season becomes favourable for travelling, direct your course for this place, where affection will receive you, and nurse you, and united prayers be offered for your perfect recovery. The first and great consideration is the re-establishment of your health. After that *desideratum* is effected, you need have no apprehensions for your future prospects. In the meantime, my dear friend, consider yourself at liberty to command pecuniary resources from me—do not only look upon me as the Brother of your wife and the uncle of your children, but as an affectionate and sincere friend. My family all unite in great affection and best wishes to yours, and in fervent prayer for the speedy recovery of your health. Yours affectionately,

Dr. John Maclean, Wm. Bainbridge.
Princeton, New Jersey.

This letter was penned *ten* days before the death of Dr. Maclean and must have been received by Dr. M. within a day or two after it was written, but he was too low to make to it any reply. It assured him however, that as long as his brother-in-law and friend lived, and could look after the interests of

his family, they would not suffer for want of means to maintain them, and so it turned out. Upon receiving information of Dr. Maclean's death, he at once let his sister know that while he must decline to act as one of the Executors of her husband's small estate, he would remit a debt due to him by Dr. M. and make her yearly a liberal allowance, towards the support of herself and children: and for ten years he continued to them his most generous aid, until from their own savings and with the assistance of their father's friends in Scotland, provision was made for the education of them all: and for this happy result they were indebted to no one so much as to their mother, who, by her great care and prudent management, was enabled to keep her entire family together; and had the pleasure to know, before her own departure from this life, that all her children had or would receive the education, which she and her husband were both desirous they should have.

Dr. Maclean died on Thursday, the 17th of February, 1814, and was buried on Saturday, the 19th, in the Princeton Cemetery, his grave being contiguous to those of the College Presidents and Professors who had preceded him to the tomb. His wife survived him fourteen years. Her grave and those of their two daughters, Mary Bainbridge and Agnes Maclean, and of their son, Wm. Bainbridge Maclean, and of their grandson John Maclean, son of Dr. G. M. Maclean, are all in the same plot with his own,—with a few other relatives.

The following epitaph, written by the Rev. Dr. S. S. Smith, then late President of the College, was inscribed upon the marble slab above his grave. There are one or two slight errors in regard to dates.

Laus Deo Optimo Maximo.

Intra hoc Sepulchrum
depositae sunt, spe resurrectionis beatae,
reliquiae Mortales
JOHANNIS MACLEAN, M.D.
viri admodum venerandi, omnibus dotibus animi praecellentis,
qui
Glasguae Scotorum natus, Cal. Martii, anno MDCCLXXI,
in Americam migravit anno MDCCXCV.
Physicae Naturalis Scientia penitus instructus,
et
Arte Chemica praecipue florens,
earum artium in Academia Nassovica Professor designatus est,
tertio Cal. Oct ejusdem anni.
Professoribus ac juventute in Collegio
mire dilectus, atque observatus,
e vita eheu decessit,
omnibus plorandus,
Idibus Februarii,
MDCCCXIV.

A Translation.

To God, the Greatest and the Best, be Glory.

Within this tomb, in hope of a happy resurrection,
are deposited the mortal remains
of John Maclean, M.D.
a man to be held in great veneration, with all the
endowments of a superior mind,
who
born at Glasgow, Scotland, on the Calends of March, A. D. 1771,
removed to America, in the year 1795.
Thoroughly versed in the Science of Natural Philosophy,
and especially excelling in the Art of Chemistry,
he was chosen Professor of these Arts at Nassau Hall,
on the 29th of September of the same year.
Exceedingly beloved and esteemed, by the
Professors and youth of the College,
he departed this life,
lamented by all,
on the Ides of February,
MDCCCXIV.

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ERRATA.

For " This letter," page 30 read, The letter. For 1795, page 30, read 1796.